Smith Economics Group, Ltd.

A Division of Corporate Financial Group

Economics / Finance / Litigation Support

Stan V. Smith, Ph.D. President

August 28, 2019

Mr. John M. Eubanks Motley Rice 28 Bridgeside Blvd. Mt. Pleasant, SC 29464

Re: Miller

Dear Mr. Eubanks:

You have asked me to calculate the value of certain losses subsequent to the death of Nicole Miller. These losses are: (1) the loss of wages and employee benefits; (2) the loss of housekeeping and household management services; and (3) the loss of the value of life ("LVL"), also known as loss of enjoyment of life.

QUALIFICATIONS AND EXPERIENCE

I am President of Smith Economics Group, Ltd., headquartered in Chicago, IL, which provides economic and financial consulting nationwide. I have worked as an economic and financial consultant since 1974, after completing a Research Internship at the Federal Reserve, Board of Governors, in Washington, D.C. My curriculum vitae lists all my publications in the last 10 years and beyond.

I received my Bachelor's Degree from Cornell University. I received a Master's Degree and my Ph.D. in Economics from the University of Chicago; Gary S. Becker, Nobel Laureate 1992, was my Ph.D. thesis advisor. The University of Chicago is one of the world's preeminent institutions for the study of economics, and the home of renowned research in the law and economics movement.

As President of Smith Economics, I have performed economic analyses in a great variety of engagements, including damages analysis in personal injury and wrongful death cases, business valuation, financial analysis, antitrust, contract losses, a wide range of class action matters, employment discrimination, defamation, and intellectual property valuations including evaluations of reasonable royalty.

I have more than 40 years of experience in the field of economics. I am a member of various economic associations and served for three years as Vice President of the National Association of Forensic Economics (NAFE) which is the principal association in the field. I was also on the Board of Editors of

the peer-reviewed journal, the Journal of Forensic Economics, for over a decade; I have also published scholarly articles in this journal. The JFE is the leading academic journal in the field of Forensic Economics.

I am the creator and founder of Ibbotson Associates' Stock, Bonds, Bills, and Inflation (SBBI) Yearbook, Quarterly, Monthly, and SBBI/PC Services. SBBI is currently published by Duff & Phelps and is also available on various Morningstar, Inc. software platforms. SBBI is widely relied upon and regarded as the most accepted and scholarly reference by the academic, actuarial and investment community, and in courts of law. The SBBI series, which acknowledges my "invaluable role" as having "originated the idea" while Managing Director at Ibbotson Associates, is generally regarded by academics in the field of finance as the most widely accepted source of statistics on the rates of return on investment securities.

I wrote the first textbook on Forensic Economic Damages that has been used in university courses in various states; as an adjunct professor, I created and taught the first course in Forensic Economics nationwide, at DePaul University in Chicago. I have performed economic analysis in many thousands of cases in almost every state since the early 1980s.

BACKGROUND

Nicole Miller was a 21.5-year-old, Caucasian, single female, who was born on and an another and died on September 11, 2001. Ms. Miller's remaining life expectancy is estimated at 60.4 years. This data is from the National Center for Health Statistics, United States Life Tables, 2015, Vol. 67, No. 7, National Vital Statistics Reports, 2018. I assume an estimated trial or resolution date of January 1, 2020.

In order to perform this evaluation, I have reviewed the following materials: (1) High School and College records for Nicole Miller; (2) the April 13, 2005 Settlement Demand letter concerning Nicole Miller; (3) the July 15, 2005 report of Donald Frankenfeld concerning Nicole Miller; and (4) the case information form.

My methodology for estimating the losses, which is explained below, is generally based on past wage growth, interest rates, and consumer prices, as well as studies regarding the value of life. The effective net discount rate using statistically average wage growth rates and statistically average discount rates is 0.25 percent.

My estimate of the real wage growth rate is 1.00 percent per year. This growth rate is based on Business Sector, Hourly

Compensation growth data from the Major Sector Productivity and Costs Index found at the U.S. Bureau of Labor Statistics website at www.bls.gov/data/home.htm, Series ID: PRS84006103, for the real increase in wages primarily for the last 20 years.

My estimate of the real discount rate is 1.25 percent per year. This discount rate is based on primarily the rate of return on short-term U.S. Treasury investment for the last 20 years. The data is from the statistical series H.15 Selected Interest Rates, published by the Board of Governors of the Federal Reserve System found at www.federalreserve.gov. This data is also published in the Economic Report of the President Table for "Bond yields and interest rates" for the real return on U.S. Treasury investments.

Estimates of real growth and discount rates are net of inflation based on the Consumer Price Index (CPI-U), published in monthly issues of the U.S. Bureau of Labor Statistics, <u>CPI Detailed Report</u> (Washington, D.C.: U.S. Government Printing Office) and available at the U.S. Bureau of Labor Statistics website at www.bls.gov/data/home.htm, Series ID: CUUR0000SAO. The rate of inflation for the past 20 years has been 2.16 percent.

I. LOSS OF WAGES AND EMPLOYEE BENEFITS - Annual Employment

Tables 1 through 9 show the loss of wages and benefits for Nicole Miller. Ms. Miller was a student at West Valley College in Saratoga, CA, and was 8 credit hours away from completion of an Associate's degree. Ms. Miller intended to continue her education, and prior to her death she was granted admission to Bachelor degree programs at California State University, Chico; San Jose State University; and California State University, Long Beach. The admission letter for Ms. Miller from San Jose State University indicates that she was admitted for the Fall 2001 term to study Early Childhood Education. The admission letter for Ms. Miller from California State University, Long Beach indicates that she was admitted for the Fall 2001 term to study Pre-Psychology. In addition to her studies Ms. Miller also worked part-time jobs as a server at a Chili's restaurant, as a fitness instructor, and doing promotions for a beverage company.

I calculate the wage loss for Ms. Miller to begin in January 2004 based on her expected completion of a Bachelor's degree two years after her expected enrollment in January 2002. The was loss is illustrated to begin in January 2004 at \$35,415 in year 2017 dollars based on the average annual wages of non-Hispanic white females age 18 to 24 with a Bachelor's degree. The wage base for Ms. Miller in 2004 is adjusted by the national average wage growth of 3.01 percent in 2017, 2.14 percent in 2016, 2.46 percent in 2015, 2.57 percent in 2014, zero percent in 2013, 5.87 percent in 2012, 0.52 percent in 2011, 1.23 percent in 2010, 1.05 percent in 2009, 2.94 percent in 2008, 4.08 percent in 2007, 3.89

percent in 2006, and 3.04 percent in 2005. The wage loss is grown in 2016 to \$70,260 in year 2017 dollars based on the average annual wages of non-Hispanic white females age 35 to 44 with a Bachelor's degree. The 2016 wages are adjusted by the national average wage growth rate of 3.01 percent in 2017, and the wages are grown at the national average wage growth rate of 2.92 percent in 2018 and at an estimated national average wage growth rate of 3.0 percent in 2019 and 2020. Future wages are grown at a 1.0 percent real rate. The wage data for non-Hispanic white females with a Bachelor's degree is based on the American Community Survey published by the U.S. Census Bureau, usefully summarized in a publication by Expectancy Data, Full-Time Earnings in the United States: 2017 Edition, Shawnee Mission, KS, 2019.

Employee benefit estimates are based on data from the U.S. Department of Labor, Bureau of Labor Statistics, Employer Cost of Employee Compensation - December 2018, 2019, found at www.bls.gov/ect. I have assumed that employee benefits grow at the same rate as wages and are discounted to present value at the same discount rate. Since these tables assume annual work, I do not include employee benefits relating to unemployment, injury, illness or disability; benefits are estimated at 26.3 percent of wages based on the national average for all employers.

Personal consumption is an offset of the income. I use a personal consumption offset based on a study by Ruble, Patton, and Nelson, "Patton-Nelson Personal Consumption Tables 2011-12," Journal of Legal Economics, Vol. 21, No. 1, 2014, pp. 41-55, based on data from the U.S. Department of Labor, Bureau of Labor Statistics, "Consumer Expenditure Survey, 2011-12," Washington DC, 2012, which shows personal consumption for a single person in this case to be 83.50 percent of wages in 2004 and 2005; 77.85 percent of wages in 2006 through 2008; 73.15 percent of wages in 2009; 69.15 percent of wages in 2010 and 2011; 65.75 percent of wages in 2012 and 2013; 62.80 percent of wages in 2014; 60.20 percent of wages in 2015; and 57.90 percent of wages in 2016 and thereafter.

I assume annual employment each year and show the accumulation through life expectancy. While these tables are calculated through the end of life expectancy, the losses from working through any age can be read off the table.

Based on the above assumptions, my opinion of the wage loss is \$1,849,862 ▶ Table 9; this figure assumes work to age 81.9, but the ability to work through any assumed age may be read from Table 9; for example, the loss to age 67 is \$1,357,795.

II. LOSS OF HOUSEHOLD/FAMILY HOUSEKEEPING AND HOUSEHOLD MANAGEMENT SERVICES

Tables 10 through 12 show the pecuniary loss of tangible housekeeping chores and household management services. The number of hours of housekeeping and household management services is 15.73 hours per week from 2001 through 2047 for females who work full-time, and 23.26 hours per week in 2048 and thereafter for retired females. This data is based on the American Time Use Survey published by the Bureau of Labor Statistics, www.bls.gov/tus, usefully summarized in a publication by Expectancy Data, The Dollar Value of A Day: 2017 Dollar Valuation, Shawnee Mission, KS, 2018.

The hourly value of the housekeeping and household management services is based on the mean hourly earnings of painters, construction and maintenance; childcare workers; waiters and waitresses; cooks, private household; laundry and dry-cleaning workers; maids and housekeeping cleaners; landscaping and groundskeeping workers; bookkeeping, accounting and auditing clerks; and taxi drivers and chauffeurs, which is \$15.30 per hour in year 2018 dollars. This wage data is based on information from the U.S. Bureau of Labor Statistics, Occupational Employment Statistics, May 2018 National Occupational Employment and Wage Statistics found at www.bls.gov/oes. This figure is corroborated by the average hourly values published by Expectancy Data, The Dollar Value of A Day: 2017 Dollar Valuation, Shawnee Mission, KS, 2018, which is also based on the BLS Occupational Employment Statistics.

I assess such services at their estimated market value which includes a conservative estimate of 50 percent hourly non-wage component reasonably charged by agencies or free-lance individuals who supply such services on a part-time basis, and who are responsible for advertising, hiring and vetting, training, insuring and bonding the part-time service provider, and who are also responsible for pay-related costs such as social security contributions, etc. If a person were to hire a free-lance employee directly instead of going through an agency, then he or she would have to take on the responsibility for all the non-wage costs that the agency would otherwise incur and then charge for. The money the person would pay directly in wages would be only a portion of the total costs. The total costs would include those items discussed above that the agency would otherwise incur.

Adding the non-wage component to the hourly wage is consistent with labor market theory and competitive market behavior. Peer-reviewed economic research supports this theory and shows that the non-wage costs can average up to 300 percent for the wage. See, for example, Cushing, Matthew J. and David I. Rosenbaum, "Valuing Household Services: A New Look at the Replacement Cost

Approach, " Journal of Legal Economics, Vol 19, No. 1, 2012, pp. 37-60, wherein the authors found that non-wage costs exceed wage costs by 167 percent. This is more than triple the 50 percent non-wage costs amount I use, discussed above. Also see Smith, David A., Stan V. Smith, and Stephanie R. Uhl, "Estimating the Value of Family Household Management Services: Approaches and Markups, " Forensic Rehabilitation & Economics, Vol 3, No. 2, 2010, pp. 85-94. According to this research, the statistical probability is 99 percent that the non-wage costs exceed 250 percent of the wage cost. The use of only a 50 percent non-wage cost makes my estimate very conservative, and it far more than compensates for two possible variations: variations in the national wage depending on locality, and variations in different types of services actually performed in the household. Thus even if one or more of the different types of services are not performed, and even if the services are provided in low wage areas, my use of the low, 50 percent non-wage costs more than compensates for these factors.

According to Merry Maids, a national home cleaning service agency, the charges for their services within the largest 100 Metropolitan Statistical Areas with populations of 500,000 and up range from \$40 to \$65 per hour, averaging \$49 per hour, in 2012. This hourly rate reflects non-wage costs of 250 percent of wages, and after adjusting for market factors, is four times the non-wage costs figure that I use, resulting in an hourly rate of more than double the rate that I use. Thus my use of only a 50 percent addition for non-wage costs is, in fact, very conservative. The hourly value of these services grows at the same rate as the wage growth rate discussed above.

Based on these assumptions, and Nicole Miller's life expectancy of 81.9 years, my opinion of the loss of the value of housekeeping and household management services is \$1,194,785 ▶ Table 12.

III LOSS OF VALUE OF LIFE

Tables 13 through 15 show the loss of the value of life. Economists have long agreed that life is valued at more than the lost earnings capacity. My estimate of the value of life is based on many economic studies on what we, as a contemporary society, actually pay to preserve the ability to lead a normal life. The studies examine incremental pay for risky occupations as well as a multitude of data regarding expenditure for life savings by individuals, industry, and state and federal agencies. Based on the average value of a statistical life and life expectancy of 81.9 years, my opinion of the loss of the value of life for Nicole Miller is \$6,980,657 ▶ Table 15.

My estimate of the value of life is consistent with estimates published in other studies that examine and review the broad spectrum of economic literature on the value of life. Among these is "The Plausible Range for the Value of Life," Journal of Forensic Economics, Vol. 3, No. 3, Fall 1990, pp. 17-39, by T. R. Miller. This study reviews 67 different estimates of the value of life published by economists in peer-reviewed academic journals. The Miller results, in most instances, show the value of life to range from approximately \$1.6 million to \$2.9 million dollars in year 1988 after-tax dollars, with a mean of approximately \$2.2 million dollars. In "The Value of Life: Estimates with Risks by Occupation and Industry, " Economic Inquiry, Vol. 42, No. 1, May 2003, pp. 29-48, Professor W. K. Viscusi estimates the value of life to be approximately \$4.7 million dollars in year 2000 dollars. An early seminal paper on the value of life was written by Richard Thaler and Sherwin Rosen, "The Value of Saving a Life: Evidence from the Labor Market." in N.E. Terlickyj (ed.), Household Production and Consumption. New York: Columbia University Press, 1975, pp. 265-300. The Meta-Analyses Appendix to this report reviews additional literature suggesting a value of life of approximately \$5.4 million in year 2008 dollars.

Because it is generally accepted by economists, the economic methodology for the valuation of life has been found to meet the <u>Daubert</u> and <u>Frye</u> standards by many courts, along with the Rules of Evidence in many states nationwide. My testimony on the value of life has been accepted in approximately 225 state and federal cases nationwide in approximately two-thirds of the states and two-thirds of the federal jurisdictions. Testimony has been accepted by U.S. district and appellate courts as well as in state circuit, appellate, and supreme courts. Proof of general acceptance and other standards is found in a discussion of the extensive references to the scientific economic peer-reviewed literature on the value of life listed in the **Value of Life** Appendix to this report.

The underlying, academic, peer-reviewed studies fall into two general groups: (1) consumer behavior and purchases of safety devices; (2) wage risk premiums to workers; in addition, there is a third group of studies consisting of cost-benefit analyses of regulations. For example, one consumer safety study analyzes the costs of smoke detectors and the lifesaving reduction associated with them. One wage premium study examines the differential rates of pay for dangerous occupations with a risk of death on the job. Just as workers receive shift premiums for undesirable work hours, workers also receive a higher rate of pay to accept a increased risk of death on the job. A study of government regulation examines the lifesaving resulting from the installation of smoke stack scrubbers at high-sulphur, coalburning power plants. As a hypothetical example of the methodology, assume that a safety device such as a carbon

monoxide detector costs \$46 and results in lowering a person's risk of premature death by one chance in 100,000. The cost per life saved is obtained by dividing \$46 by the one in 100,000 probability, yielding \$4,600,000. Overall, based on the peer-reviewed economic literature, I estimate the central tendency of the range of the economic studies to be approximately \$4.9 million in year 2019 dollars.

Other factors may be weighed to determine if these estimated losses for Nicole Miller should be adjusted because of special qualities or circumstances that economists do not as yet have a methodology for analysis.

In tables 1 through 9 the estimated losses are calculated from January 1, 2004 through an assumed trial or resolution date of January 1, 2020, and from that date thereafter. In tables 10 through 15 the estimated losses are calculated from September 11, 2001 through an assumed trial or resolution date of January 1, 2020, and from that date thereafter. The last table in each set accumulates the past and future estimated losses. These estimates are provided as a tool, an aid, and a guide to assist the evaluation by others.

All opinions expressed in this report are clearly labeled as such. They are rendered in accordance with generally accepted standards within the field of economics and are expressed to a reasonable degree of economic certainty. Estimates, assumptions, illustrations and the use of benchmarks, which are not opinions, but which can be viewed as hypothetical in nature, are also clearly disclosed and identified herein.

In my opinion, it is reasonable for experts in the field of economics and finance to rely on the materials and information I reviewed in this case for the formulation of my substantive opinions herein.

If additional information is provided to me, which could alter my opinions, I may incorporate any such information into an update, revision, addendum, or supplement of the opinions expressed in this report.

If you have any questions, please do not hesitate to call me.

Sincerely,

Stan V. Smith, Ph.D. President

APPENDIX: HOUSEHOLD SERVICES VALUATION

Courts have long recognized claims for the value of tangible household family services as an element of damages in personal injury and wrongful death cases, as an aspect of the pecuniary loss in such cases. These services are those that are provided by the injured family member to himself or herself and to other family members, without charge or cost. Other family members who may receive such services can include spouses, children, parents or siblings; such family members do not necessarily have to reside in the same household to receive such services.

Economists and courts have also long recognized that an appropriate method in valuing such tangible services is to value their estimated market-based costs by examining costs paid in labor markets that provide generally comparable services for. Thus, economists can value the service by looking at market equivalents from which a pecuniary standard can be established. This approach is set forth in the 1913 U.S.Supreme Court Decision, Michigan Central Railroad Company v. Vreeland, 227 U.S. 59 (1913). So this method is a century old.

The Supreme Court's suggesting in valuing compensable services in the Vreeland decision is a standard that is not rigid, but actually rather general: "[The] pecuniary loss or damage must be one which can be measured by some standard.... Compensation for such loss manifestly does not include damages by way of recompense for grief or wounded feelings." Michigan Central v. Vreeland.

Examples of lost household services that used to be performed by persons (whether fatally or non-fatally injured) can include physical chores such as mowing the lawn, painting the house, cleaning the windows, doing the laundry, washing and repairing the car, preparing the meals and doing the dishes, among others. For many decades economists have met the Supreme Court's general standard by using labor market equivalents for cooks, laundry workers, gardeners, maids, etc. in valuing the physical chores regarding housekeeping services.

Additionally, economists have recognized that tangible services to family members include services well beyond the physical housekeeping chores. For example, William G. Jungbauer and Mark J. Odegard, in Maximizing Recovery in FELA Wrongful Death Actions, in Assessing Family Loss in Wrongful Death Litigation:

The Special Roles of Lost Services and Personal Consumption,
Lawyers & Judges Publishing Co., 1999, pp. 284, indicate that a complete analysis of all services performed by family members includes much, much more than the physical housekeeping chores.

Frank D. Tinari, in a peer-reviewed, scientific, economic journal article "Household Services: Toward a More Comprehensive Measure," Journal of Forensic Economics, Vol. 11, No. 3, Fall

1998, pp. 253-265, expresses the same view. Dr. Tinari has been a tenured Professor at Seton Hall University, and is a former president of the National Association of Forensic Economics. There has been no peer-reviewed critique of this article since it appeared.

Jungbauer and Odegard indicate that a person may have provided services of many other professions such as that of a chauffeur, driving other family members to appointments, or that of a security guard, especially regarding the injury to a male spouse, etc. Every family member acts as a companion to other family members. And it is common for family members to act as counselors for one another, typically providing advice and counsel on important personal, family, medical, financial, career or other issues. The marketplace can and does value such items of loss. If the person cannot provide these services, or does so at a reduced capacity or rate, there is a distinct and definite loss to the other family members. These losses have a definite and easily measurable pecuniary value. Vreeland requires only that a "reasonable expectation" of loss of services be proven and that such loss be valued by some standard, presumably a reasonably-based economic standard, to allow recovery.

The economic literature on recovery of loss of services discusses an estimated market-oriented valuation cost method to assess the pecuniary value of the loss of accompaniment services, as well as the value of advice, guidance and counsel services that family members provide to one another, within a broadly defined scope of family services. See, for example, Frank D. Tinari, "Household Services: Toward a More Comprehensive Measure, " <u>Journal of Forensic Economics</u>, Vol. 11, No. 3, Fall 1998, pp. 253-265.

Finally, according to Chief Justice Robert Wilentz of the Supreme Court of New Jersey, in <u>Green v. Bittner</u>, 85 NJ 1, 1980, pp. 12, accompaniment services, to be compensable, must be that which would have provided services substantially equivalent to those provided by the companions often hired today by the aged or infirm, or substantially equivalent to services provided by nurses or practical nurses; and its value must be confined to what the marketplace would pay a stranger with similar qualifications for performing such services.

In valuing the household services that are provided by family members to one another, beyond the physical housekeeping chores, both the U.S Supreme Court and the New Jersey Supreme Court discuss looking at labor markets for the equivalent value of such services. This methodology is identical to the traditional approach that economists have been using for over four decades in valuing the physical chores involved in housekeeping services. 5206

APPENDIX: VALUE OF LIFE

The economic methodology for the valuation of life has been found to meet the <u>Daubert</u> and <u>Frye</u> standards by many courts, along with the Rules of Evidence in many states nationwide. My testimony on the value of life has been accepted in approximately 225 state and federal cases nationwide in approximately two-thirds of the states and two-thirds of the federal jurisdictions. Testimony has been accepted by U.S. district and appellate courts as well as in state circuit, appellate, and supreme courts. The <u>Daubert</u> standard sets forth four criteria:

- 1. Testing of the theory and science
- 2. Peer Review
- 3. Known or potential rate of error
- 4. Generally accepted.

Testing of the theory and science has been accomplished over the past four decades, since the 1960s. Dozens of economists of high renown have published over a hundred articles in high quality, peer-reviewed economic journals measuring the value of life. The value of life theories are perhaps among the most well-tested in the field of economics, as evidenced by the enormous body of economic scientific literature that has been published in the field and is discussed below.

Peer Review of the concepts and methodology have been extraordinarily extensive. One excellent review of this extensive, peer-reviewed literature can be found in "The Value of Risks to Life and Health, " W. K. Viscusi, Journal of Economic Literature, Vol. 31, December 1993, pp. 1912-1946. A second is "The Value of a Statistical Life: A Critical Review of Market Estimates throughout the World." W. K. Viscusi and J. E. Aldy, Journal of Risk and Uncertainty, Vol. 27, No. 1, November 2002, pp. 5-76. Additional theoretical and empirical work by Viscusi, a leading researcher in the field, can be found in: "The Value of Life", W. K. Viscusi, John M. Olin Center for Law, Economics, and Business, Harvard Law School, Discussion Paper No. 517, June 2005. An additional peer-reviewed article discusses the application to forensic economics: "The Plausible Range for the Value of Life, "T. R. Miller, Journal of Forensic Economics, Vol. 3, No. 3, Fall 1990, pp. 17-39, which discusses the many dozens of articles published in other peer-reviewed economic journals on this topic. This concept is discussed in detail in "Willingness to Pay Comes of Age: Will the System Survive?" T. R. Miller, Northwestern University Law Review, Summer 1989, pp. 876-907, and "Hedonic Damages in Personal Injury and Wrongful Death

Litigation," by Stan V. Smith in Gaughan and Thornton, eds., Litigation Economics, Contemporary Studies in Economic and Financial Analysis, Vol. 74, pp. 39-59, JAI Press, Greenwich, CT, 1993. Kenneth Arrow, a Nobel Laureate in economics, discusses this method for valuing life in "Invaluable Goods," Journal of Economic Literature, Vol. 35, No. 2, 1997, pp. 759. See the Meta-Analyses Appendix for an additional review of the literature.

The known or potential rate of error is well researched. All of these articles discuss the known or potential rate of error, well within the acceptable standard in the field of economics, generally using a 95% confidence rate for the statistical testing and acceptance of results. There are few areas in the field of economics where the known or potential rate of error has been as well-accepted and subject to more extensive investigation.

General Acceptance of the concepts and methodology on the value of life in the field of economics is extensive. This methodology is and has been generally accepted in the field of economics for many years. Indeed, according to the prestigious and highly-regarded research institute, The Rand Corporation, by 1988, the peer-reviewed scientific methods for estimating the value of life were well-accepted: "Most economists would agree that the willingness-to-pay methodology is the most conceptually appropriate criterion for establishing the value of life," Computing Economic loss in Cases of Wrongful Death, King and Smith, Rand Institute for Civil Justice, R-3549-ICJ, 1988.

While first discussed in cutting edge, peer-reviewed economic journals, additional proof of general acceptance is now indicated by the fact that this methodology is now taught in standard economics courses at the undergraduate and graduate level throughout hundreds of colleges and universities nationwide as well as the fact that it is taught and discussed in widelyaccepted textbooks in the field of law and economics: Economics, Sixth Edition, David C. Colander, McGraw-Hill Irwin, Boston, 2006, pp. 463-465; this introductory economics textbook is the third most widely used textbook in college courses nationwide. Hamermesh and Rees's The Economics of Work and Pay, Harper-Collins, 1993, Chapter 13, a standard advanced textbook in labor economics, also discusses the methodology for valuing life. Other textbooks discuss this topic as well. Richard Posner, Judge and former Chief Judge of the U.S. Court of Appeals for the highly regarded 7th Circuit and Senior Lecturer at the University of Chicago Law School, one of most prolific legal writers in America, details the Value of Life approach in his widely used textbooks: Economic Analysis of Law, 1986, Little Brown & Co., pp. 182-185 and Tort Law, 1982, Little Brown & Co., pp. 120-126.

As further evidence of general acceptance in the field, some surveys (albeit non-scientific) published in the field of

forensic economics show that hundreds of economists nationwide are now familiar with this methodology and are available to prepare (and critique) forensic economic value of life estimates. Indeed, some economists who indicate they will prepare such analysis for plaintiffs also are willing to critique such analysis for defendants, as I have done. That an economist is willing to critique a report does not indicate that he or she is opposed to the concept or the methodology, but merely available to assure that the plaintiff economist has employed proper techniques. The fact that there are economists who indicate they do not prepare estimates of value of life is again no indication that they oppose the methodology: many claim they are not familiar with the literature and untrained in this area. While some CPAs and others without a degree in economics have opposed these methods, such professionals do not have the requisite academic training and are unqualified to make such judgements. However, as in any field of economics, this area is not without any dissent. General acceptance does not mean universal acceptance.

Additional evidence of general acceptance in the field is found in the teaching of the concepts regarding the value of life. Forensic Economics is now taught as a special field in a number of institutions nationwide. I taught what is believed to be the first course ever presented in the field of Forensic Economics at DePaul University in Spring, 1990. My own book, Economic/Hedonic Damages, Anderson, 1990, and supplemental updates thereto, coauthored with Dr. Michael Brookshire, a Professor of Economics in West Virginia, has been used as a textbook in at least 5 colleges and universities nationwide in such courses in economics, and has a thorough discussion of the methodology. Toppino et. al., in "Forensic Economics in the Classroom," published in The Earnings Analyst, Journal of the American Rehabilitation Economics Association, Vol. 4, 2001, pp. 53-86, indicate that hedonic damages is one of 15 major topic areas taught in such courses.

Lastly, general acceptance is found by examining publications in the primary journal in the field of Forensic Economics, which is the peer-reviewed Journal of Forensic Economics, where there have been published many articles on the value of life. Some are cited above. Others include: "The Econometric Basis for Estimates of the Value of Life, " W. K. Viscusi, Vol 3, No. 3, Fall 1990, pp. 61-70; "Hedonic Damages in the Courtroom Setting." Stan V. Smith, Vol. 3, No. 3, Fall 1990, pp. 41-49; "Issues Affecting the Calculated Value of Life, " E. P. Berla, M. L. Brookshire and Stan V. Smith, Vol 3, No. 1, 1990, pp. 1-8; "Hedonic Damages and Personal Injury: A Conceptual Approach." G. R. Albrecht, Vol. 5., No. 2, Spring/Summer 1992, pp. 97-104; "The Application of the Hedonic Damages Concept to Wrongful and Personal Injury Litigation. "G. R. Albrecht, Vol. 7, No. 2, Spring/Summer 1994, pp. 143-150; and also "A Review of the Monte Carlo Evidence Concerning Hedonic Value of Life Estimates, " R. F.

Gilbert, Vol. 8, No. 2, Spring/Summer 1995, pp. 125-130. Professor Ike Mathur, while Chairman of the Department of Finance at Southern Illinois University wrote an article on how the value of life studies can be used to provide a basis for estimating the value of life per year in application to litigation. This article corroborates my approach: "Estimating Value of Life per Life Year." I. Mathur, Journal of Forensic Economics, Vol. 3, No. 3, 1990, pp. 95-96. As do many of the authors of applications of the value of life literature to litigation economics, Professor Mathur has frequently testified in court, and courts have admitted his testimony.

It is important to note that this methodology is endorsed and employed by the U. S. Government as the standard and recommended approach for use by all U. S. Agencies in valuing life for policy purposes, as mandated in current and past Presidential Executive Orders in effect since 1972, and as discussed in "Report to Congress on the Costs and Benefits of Federal Regulations, " Office of Management and Budget, 1998, and "Economic Analysis of Federal Regulations Under Executive Order 12866," Executive Office of the President, Office of Management and Budget, pp. 1-37, and "Report to the President on Executive Order No. 12866," Regulatory Planning and Review, May 1, 1994, Office of Information and Regulatory Affairs, Office of Management and Budget. Prior presidents signed similar orders as discussed in "Federal Agency Valuations of Human life," Administrative Conference of the United States, Report for Recommendation 88-7, December 1988, pp. 368-408. 926

APPENDIX: META-ANALYSES AND VALUE OF LIFE RESULTS SINCE 2000

Below I list the principal systematic reviews (meta-analyses), since the year 2000, of the value of life literature, and the values of a statistical life that they recommend. In statistics, a meta-analysis combines the results of several studies that address a set of related research hypotheses. Meta-analysis increase the statistical power of studies by analyzing a group of studies and provide a more powerful and accurate data analysis than would result from analyzing each study alone. Based on those reviews, the Summary Table suggests a best estimate. The following table summarizes the studies and their findings.

These statistically based studies place the value between \$4.4 and \$7.5 million, with \$5.9 million in year 2005 dollars representing a conservative yet credible estimate of the average (and range midpoint) of the values of a statistical life published in the studies in year 2005 dollars. Net of human capital, a credible net value of life based on all these literature reviews to be \$4.8 million in year 2005 dollars, or \$5.4 million in year 2008 dollars.

The actual value that I use, \$4.1 million in year 2008 dollars (\$4.9 million in year 2019 dollars) is approximately 24 percent lower than a conservative average estimate based on the credible meta-analyses. This value was originally based on a review conducted in the late 1980s, averaging the results published by that time. I have increased that late 1980s value only by inflation over time, despite the fact a review of literature over the years since that time has put obvious upward pressure on the figure that I use.

VALUE OF STATISTICAL LIFE SUMMARY TABLE

Mean and range of value of statistical life estimates (in 2005 dollars) from the best meta-analyses and systematic reviews since 2000 and characteristics of those reviews.

Study	Formal Meta- Analysis?	Number of Values	Best Estimate (2005 Dollars)	Range	Context
Miller 2000	Yes	68 estimates	\$5.1M	\$4.5- \$6.2M	US estimate from all
Mrozek & Taylor 2002	Yes	203 estimates	\$4.4M	+ or - 35%	Labor market
Viscusi & Aldy 2003	Yes	49 estimates	\$6.5M	\$5.1- \$9.6M	Labor market, US estimate from all
Kochi et al. 2006	Yes	234 estimates	\$6.0M	+ or - 44%	Labor market survey
Bellavance 2006 (published in 2009)	Yes	37 estimates	\$7.5M	+ or - 19%	Labor market

Adapted from Ted R. Miller's paper "Hedonic Damages," <u>Journal of Forensic Economics</u>, Vol. 20, No. 2 (October 2008), pp. 137-153.

Miller (2000) started from the Miller 1989 JFE estimates and used statistical methods to adjust for differences between studies. It also added newer studies, primarily ones outside the United States. The authors specified the most appropriate study approach a priori, which allowed calculation of a best estimate from the statistical regression. Miller, Ted R, "Variations between Countries in Values of Statistical Life", <u>Journal of Transport</u> Economics and Policy, Vol. 34, No. 2 (May 2000), pp. 169-188.

Mrozek and Taylor (2002) searched intensively for studies of the value of life implied by wages paid for risky jobs. They coded all values from each study rather than a most appropriate estimate. A statistical analysis identified what factors accounted for the differences in values between studies. The authors specified the most appropriate study approach a priori, which allowed calculation of a best estimate from the statistical regression. Mrozek, Janusz R. and Laura O. Taylor, "What Determines the Value of Life? A Meta-Analysis", Journal of Policy Analysis and Management, Vol. 21, No. 2 (2002), pp. 253-270.

Viscusi and Aldy (2003) focused on values from labor market studies that they considered of high quality and that provided data on risk levels and other important explanatory variables. They used statistical methods to account for variations between studies and derive a best estimate. W.K. Viscusi and J.E. Aldy, "The Value of a Statistical Life: A Critical Review of Market Estimates Throughout the World", <u>Journal of Risk and Uncertainty</u>, Vol. 27, No. 1 (2003), pp. 5-76.

Kochi et al. (2006) searched intensively for studies of the value of life implied by wages and coded all values from each study rather than a most appropriate estimate. They did not filter study quality carefully. The best estimate was derived by statistical methods based on the distribution of the values within and across studies. Kochi, Ikuho, Bryan Hubbell, and Randall Kramer, "An Empirical Bayes Approach to Combining and Comparing Estimates of the Value of a Statistical Life for Environmental Policy Analysis", Environmental and Resource Economics, Vol. 34 (2006), pp. 385-406.

Bellavance et al. (2009) focused on values from labor market studies that they considered of high quality and that provided data on risk levels and other important explanatory variables. They used statistical methods to account for variations between studies and derive a best estimate. Bellavance, Francois, Georges Dionne, and Martin Lebeau, "The Value of a Statistical Life: A Meta-Analysis with a Mixed Effects Regression Model," Journal of Health Economics, Vol. 28, Issue 2, (2009), pp. 444-464. 3A22

SUMMARY OF LOSSES FOR Nicole Miller

TABLE	DESCRIPTION	ESTIMATE
	EARNINGS	
	LOSS OF WAGES & BENEFITS, NET OF PERSONAL CONSUMPTION	
9	Annual Employment to age 67	\$1,357,795
	HOUSEHOLD/FAMILY SERVICES	(w)
	LOGG OF WOMEN PARTY MONGENERANG	
12	LOSS OF HOUSEHOLD/FAMILY HOUSEKEEPING AND HOME MANAGEMENT SERVICES	\$1,194,785
	LOSS OF ENJOYMENT OF LIFE	
15	LOSS OF VALUE OF LIFE	\$6,980,657

The information on this Summary of Losses is intended to summarize losses under certain given assumptions. Please refer to the report and the tables for all the opinions.

LOSS OF PAST WAGES 2004 - 2019

YEAR	AGE	WAGES	CUMULATE

****	***	*****	*****
2004	24	\$25,653	\$25,653
2005	25	27,831	53,484
2006	26	30,194	83,678
2007	27	32,757	116,435
2008	28	35,538	151,973
2009	29	38,555	190,528
2010	30	41,828	232,356
2011	31	45,379	277,735
2012	32	49,232	326,967
2013	33	53,412	380,379
2014	34	57,947	438,326
2015	35	62,867	501,193
2016	36	68,207	569,400
2017	37	70,260	639,660
2018	38	72,314	711,974
2019	39	74,484	\$786,458
MILLER		\$786,458	
MITTIEK		2700,430	

LOSS OF PAST EMPLOYEE BENEFITS 2004 - 2019

		EMPLOYEE	
YEAR	AGE	BENEFITS	CUMULATE
****	***	*****	*****
2004	24	\$6,747	\$6,747
2005	25	7,320	14,067
2006	26	7,941	22,008
2007	27	8,615	30,623
2008	28	9,346	39,969
2009	29	10,140	50,109
2010	30	11,001	61,110
2011	31	11,935	73,045
2012	32	12,948	85,993
2013	33	14,047	100,040
2014	34	15,240	115,280
2015	35	16,534	131,814
2016	36	17,938	149,752
2017	37	18,478	168,230
2018	38	19,019	187,249
2019	39	19,589	\$206,838
MILLER		\$206,838	

LOSS OF PAST PERSONAL CONSUMPTION 2004 - 2019

		PERSONAL	
YEAR	AGE	CONSUMPTION	CUMULATE
****	***	*******	*****
2004	24	-\$27,054	-\$27,054
2005	25	-29,351	-56,405
2006	26	-29,687	-86,092
2007	27	-32,207	-118,299
2008	28	-34,941	-153,240
2009	29	-35,621	-188,861
2010	30	-38,645	-227,506
2011	31	-39,634	-267,140
2012	32	-42,999	-310,139
2013	33	-44,353	-354,492
2014	34	-45,964	-400,456
2015	35	-49,866	-450,322
2016	36	-51,858	-502,180
2017	37	-53,419	-555,599
2018	38	-54,980	-610,579
2019	39	-56,630	-\$667,209
MILLER	2	-\$667,209	

Case 1:03-md-01570-GBD-SN Document 5034-11 Filed 08/31/19 Page 23 of 37 Table 4

ECONOMIC LOSS TO DATE 2004 - 2019

			EMPLOYEE	PERSONAL		
YEAR	AGE	WAGES	BENEFITS	CONSUMPTION	TOTAL	CUMULATE
***	***	*****	*****	*******	*****	*****
2004	24	\$25,653	\$6,747	-\$27,054	\$5,346	\$5,346
2005	25	27,831	7,320	-29,351	5,800	11,146
2006	26	30,194	7,941	-29,687	8,448	19,594
2007	27	32,757	8,615	-32,207	9,165	28,759
2008	28	35,538	9,346	-34,941	9,943	38,702
2009	29	38,555	10,140	-35,621	13,074	51,776
2010	30	41,828	11,001	-38,645	14,184	65,960
2011	31	45,379	11,935	-39,634	17,680	83,640
2012	32	49,232	12,948	-42,999	19,181	102,821
2013	33	53,412	14,047	-44,353	23,106	125,927
2014	34	57,947	15,240	-45,964	27,223	153,150
2015	35	62,867	16,534	-49,866	29,535	182,685
2016	36	68,207	17,938	-51,858	34,287	216,972
2017	37	70,260	18,478	-53,419	35,319	252,291
2018	38	72,314	19,019	-54,980	36,353	288,644
2019	39	74,484	19,589	-56,630	37,443	\$326,087
MILLER		\$786,458	\$206,838	-\$667,209	\$326,087	

PRESENT VALUE OF FUTURE WAGES 2020 - 2062

			DISCOUNT	PRESENT	
YEAR	AGE	WAGES	FACTOR	VALUE	CUMULATE
****	***	*****	*****	*****	******
2020	40	\$76,718	0.98765	\$75,771	\$75,771
2021	41	77,485	0.97546	75,584	151,355
2022	42	78,260	0.96342	75,397	226,752
2023	43	79,043	0.95152	75,211	301,963
2024	44	79,833	0.93978	75,025	376,988
2025	45	80,631	0.92817	74,839	451,827
2026	46	81,437	0.91672	74,655	526,482
2027	47	82,251	0.90540	74,470	600,952
2028	48	83,074	0.89422	74,286	675,238
2029	49	83,905	0.88318	74,103	749,341
2030	50	84,744	0.87228	73,920	823,261
2031	51	85,591	0.86151	73,738	896,999
2032	52	86,447	0.85087	73,555	970,554
2033	53	87,311	0.84037	73,374	1,043,928
2034	54	88,184	0.82999	73,192	1,117,120
2035	55	89,066	0.81975	73,012	1,190,132
2036	56	89,957	0.80963	72,832	1,262,964
2037	57	90,857	0.79963	72,652	1,335,616
2038	58	91,766	0.78976	72,473	1,408,089
2039	59	92,684	0.78001	72,294	1,480,383
2040	60	93,611	0.77038	72,116	1,552,499
2041	61	94,547	0.76087	71,938	1,624,437
2042	62	95,492	0.75147	71,759	1,696,196
2043	63	96,447	0.74220	71,583	1,767,779
2044	64	97,411	0.73303	71,405	1,839,184
2045	65	98,385	0.72398	71,229	1,910,413
2046	66	99,369	0.71505	71,054	1,981,467
2047	67	100,363	0.70622	70,878	2,052,345
2048	68	101,367	0.69750	70,703	2,123,048
2049	69	102,381	0.68889	70,529	2,193,577
2050	70	103,405	0.68038	70,355	2,263,932
2051	71	104,439	0.67198	70,181	2,334,113
2052	72	105,483	0.66369	70,008	2,404,121
2053	73	106,538	0.65549	69,835	2,473,956
2054	74	107,603	0.64740	69,662	2,543,618
2055	75	108,679	0.63941	69,490	2,613,108
2056	76	109,766	0.63152	69,319	2,682,427
2057	77	110,864	0.62372	69,148	2,751,575
2058	78	111,973	0.61602	68,978	2,820,553
2059	79	113,093	0.60841	68,807	2,889,360
2060	80	114,224	0.60090	68,637	2,957,997
2061	81	115,366	0.59348	68,467	3,026,464
2062	82	7,981	0.59298	4,733	\$3,031,197

NICOLE MILLER

\$3,031,197

PRESENT VALUE OF FUTURE EMPLOYEE BENEFITS 2020 - 2062

		EMPLOYEE	DISCOUNT	PRESENT	
YEAR	AGE	BENEFITS	FACTOR	VALUE	CUMULATE
****	***	*****	*****	******	*****
2020	40	\$20,177	0.98765	\$19,928	\$19,928
2021	41	20,379	0.97546	19,879	39,807
2022	42	20,582	0.96342	19,829	59,636
2023	43	20,788	0.95152	19,780	79,416
2024	44	20,996	0.93978	19,732	99,148
2025	45	21,206	0.92817	19,683	118,831
2026	46	21,418	0.91672	19,634	138,465
2027	47	21,632	0.90540	19,586	158,051
2028	48	21,848	0.89422	19,537	177,588
2029	49	22,067	0.88318	19,489	197,077
2030	50	22,288	0.87228	19,441	216,518
2031	51	22,510	0.86151	19,393	235,911
2032	52	22,736	0.85087	19,345	255,256
2033	53	22,963	0.84037	19,297	274,553
2034	54	23,192	0.82999	19,249	293,802
2035	55	23,424	0.81975	19,202	313,004
2036	56	23,659	0.80963	19,155	332,159
2037	57	23,895	0.79963	19,107	351,266
2038	58	24,134	0.78976	19,060	370,326
2039	59	24,376	0.78001	19,014	389,340
2040	60	24,620	0.77038	18,967	408,307
2041	61	24,866	0.76087	18,920	427,227
2042	62	25,114	0.75147	18,872	446,099
2043	63	25,366	0.74220	18,827	464,926
2044	64	25,619	0.73303	18,779	483,705
2045	65	25,875	0.72398	18,733	502,438
2046	66	26,134	0.71505	18,687	521,125
2047	67	26,395	0.70622	18,641	539,766
2048	68	26,660	0.69750	18,595	558,361
2049	69	26,926	0.68889	18,549	576,910
2050	70	27,196	0.68038	18,504	595,414
2051	71	27,467	0.67198	18,457	613,871
2052	72	27,742	0.66369	18,412	632,283
2053	73	28,019	0.65549	18,366	650,649
2054	74	28,300	0.64740	18,321	668,970
2055	75	28,583	0.63941	18,276	687,246
2056	76	28,868	0.63152	18,231	705,477
2057	77	29,157	0.62372	18,186	723,663
2058	78	29,449	0.61602	18,141	741,804
2059	79	29,743	0.60841	18,096	759,900
2060	80	30,041	0.60090	18,052	777,952
2061	81	30,341	0.59348	18,007	795,959
2062	82	2,099	0.59298	1,245	\$797,204

NICOLE MILLER

\$797,204

PRESENT VALUE OF FUTURE PERSONAL CONSUMPTION 2020 - 2062

		PERSONAL	DISCOUNT	PRESENT	
YEAR	AGE	CONSUMPTION	FACTOR	VALUE	CUMULATE
***	***	******	*****	******	*****
2020	40	-\$58,329	0.98765	-\$57,609	-\$57,609
2021	41	-58,912	0.97546	-57,466	-115,075
2022	42	-59,501	0.96342	-57,324	-172,399
2023	43	-60,096	0.95152	-57,183	-229,582
2024	44	-60,697	0.93978	-57,042	-286,624
2025	45	-61,304	0.92817	-56,901	-343,525
2026	46	-61,917	0.91672	-56,761	-400,286
2027	47	-62,535	0.90540	-56,619	-456,905
2028	48	-63,161	0.89422	-56,480	-513,385
2029	49	-63,793	0.88318	-56,341	-569,726
2030	50	-64,431	0.87228	-56,202	-625,928
2031	51	-65,075	0.86151	-56,063	-681,991
2032	52	-65,726	0.85087	-55,924	-737,915
2033	53	-66,383	0.84037	-55,786	-793,701
2034	54	-67,046	0.82999	-55,648	-849,349
2035	55	-67,717	0.81975	-55,511	-904,860
2036	56	-68,394	0.80963	-55,374	-960,234
2037	57	-69,079	0.79963	-55,238	-1,015,472
2038	58	-69,770	0.78976	-55,102	-1,070,574
2039	59	-70,468	0.78001	-54,966	-1,125,540
2040	60	-71,172	0.77038	-54,829	-1,180,369
2041	61	-71,884	0.76087	-54,694	-1,235,063
2042	62	-72,603	0.75147	-54,559	-1,289,622
2043	63	-73,329	0.74220	-54,425	-1,344,047
2044	64	-74,062	0.73303	-54,290	-1,398,337
2045	65	-74,802	0.72398	-54,155	-1,452,492
2046	66	-75,550	0.71505	-54,022	-1,506,514
2047	67	-76,306	0.70622	-53,889	-1,560,403
2048	68	-77,069	0.69750	-53,756	-1,614,159
2049	69	-77,840	0.68889	-53,623	-1,667,782
2050	70	-78,619	0.68038	-53,491	-1,721,273
2051	71	-79,405	0.67198	-53,359	-1,774,632
2052	72	-80,199	0.66369	-53,227	-1,827,859
2053	73	-81,001	0.65549	-53,095	-1,880,954
2054	74	-81,811	0.64740	-52,964	-1,933,918
2055	75	-82,629	0.63941	-52,834	-1,986,752
2056	76	-83,455	0.63152	-52,704	-2,039,456
2057	77	-84,290	0.62372	-52,573	-2,092,029
2058	78	-85,133	0.61602	-52,444	-2,144,473
2059	79	-85,985	0.60841	-52,314	-2,196,787
2060	80	-86,845	0.60090	-52,185	-2,248,972
2061	81	-87,713	0.59348	-52,056	-2,301,028
2062	82	-6,068	0.59298	-3,598	-\$2,304,626

NICOLE MILLER

-\$2,304,626

PRESENT VALUE OF FUTURE WAGE AND BENEFIT LOSS 2020 - 2062

			EMPLOYEE	PERSONAL		
YEAR	AGE	WAGES	BENEFITS	CONSUMPTION	TOTAL	CUMULATE
***	***	*****	******	******	*****	******
2020	40	\$75,771	\$19,928	-\$57,609	\$38,090	\$38,090
2021	41	75,584	19,879	-57,466	37,997	76,087
2022	42	75,397	19,829	-57,324	37,902	113,989
2023	43	75,211	19,780	-57,183	37,808	151,797
2024	44	75,025	19,732	-57,042	37,715	189,512
2025	45	74,839	19,683	-56,901	37,621	227,133
2026	46	74,655	19,634	-56,761	37,528	264,661
2027	47	74,470	19,586	-56,619	37,437	302,098
2028	48	74,286	19,537	-56,480	37,343	339,441
2029	49	74,103	19,489	-56,341	37,251	376,692
2030	50	73,920	19,441	-56,202	37,159	413,851
2031	51	73,738	19,393	-56,063	37,068	450,919
2032	52	73,555	19,345	-55,924	36,976	487,895
2033	53	73,374	19,297	-55,786	36,885	524,780
2034	54	73,192	19,249	-55,648	36,793	561,573
2035	55	73,012	19,202	-55,511	36,703	598,276
2036	56	72,832	19,155	-55,374	36,613	634,889
2037	57	72,652	19,107	-55,238	36,521	671,410
2038	58	72,473	19,060	-55,102	36,431	707,841
2039	59	72,294	19,014	-54,966	36,342	744,183
2040	60	72,116	18,967	-54,829	36,254	780,437
2041	61	71,938	18,920	-54,694	36,164	816,601
2042	62	71,759	18,872	-54,559	36,072	852,673
2043	63	71,583	18,827	-54,425	35,985	888,658
2044	64	71,405	18,779	-54,290	35,894	924,552
2045	65	71,229	18,733	-54,155	35,807	960,359
2046	66	71,054	18,687	-54,022	35,719	996,078
2047	67	70,878	18,641	-53,889	35,630	1,031,708
2048	68	70,703	18,595	-53,756	35,542	1,067,250
2049	69	70,529	18,549	-53,623	35,455	1,102,705
2050	70	70,355	18,504	-53,491	35,368	1,138,073
2051	71	70,181	18,457	-53,359	35,279	1,173,352
2052	72	70,008	18,412	-53,227	35,193	1,208,545
2053	73	69,835	18,366	-53,095	35,106	1,243,651
2054	74	69,662	18,321	-52,964	35,019	1,278,670
2055	75	69,490	18,276	-52,834	34,932	1,313,602
2056	76	69,319	18,231	-52,704	34,846	1,348,448
2057	77	69,148	18,186	-52,573	34,761	1,383,209
2058	78	68,978	18,141	-52,444	34,675	1,417,884
2059	79	68,807	18,096	-52,314	34,589	1,452,473
2060	80	68,637	18,052	-52,185	34,504	1,486,977
2061	81	68,467	18,007	-52,056	34,418	1,521,395
2062	82	4,733	1,245	-3,598	2,380	\$1,523,775
MILLER		\$3,031,197	\$797,204	-\$2,304,626	\$1,523,775	

PRESENT VALUE OF NET WAGE AND BENEFIT LOSS 2004 - 2062

			EMDI OVEE	PERSONAL		
37 T A D	7 (17	MACEC	EMPLOYEE BENEFITS	CONSUMPTION	TOTAL	CUMULATE
YEAR	AGE ***	WAGES ******	********* DEMELTIS	********	******	******
****			\$6,747	-\$27,054	\$5,346	\$5,346
2004	24	\$25,653	7,320	-29,351	5,800	11,146
2005	25	27,831	7,941	-29,687	8,448	19,594
2006	26	30,194	8,615	-32,207	9,165	28,759
2007	27	32,757	9,346	-34,941	9,943	38,702
2008	28	35,538	10,140	-35,621	13,074	51,776
2009	29	38,555	11,001	-38,645	14,184	65,960
2010	30	41,828 45,379	11,935	-39,634	17,680	83,640
2011	31		12,948	-42,999	19,181	102,821
2012	32	49,232	14,047	-44,353	23,106	125,927
2013	33	53,412	15,240	-45,964	27,223	153,150
2014	34	57,947	16,534	-49,866	29,535	182,685
2015	35	62,867	17,938	-51,858	34,287	216,972
2016	36 37	68,207	18,478	-53,419	35,319	252,291
2017	37	70,260	19,019	-54,980	36,353	288,644
2018	38	72,314 74,484	19,589	-56,630	37,443	326,087
2019	39	75,771	19,928	-57,609	38,090	364,177
2020	40	75,584	19,879	-57,466	37,997	402,174
2021	41 42	75,30 4 75,397	19,829	-57,324	37,902	440,076
2022	43	75,211	19,780	-57,183	37,808	477,884
2023 2024	44	75,025	19,732	-57,042	37,715	515,599
2024	45	74,839	19,683	-56,901	37,621	553,220
2025	46	74,655	19,634	-56,761	37,528	590,748
2020	47	74,470	19,586	-56,619	37,437	628,185
2027	48	74,286	19,537	-56,480	37,343	665,528
2029	49	74,103	19,489	-56,341	37,251	702,779
2030	50	73,920	19,441	-56,202	37,159	739,938
2031	51	73,738	19,393	-56,063	37,068	777,006
2032	52	73,555	19,345	-55,924	36,976	813,982
2033	53	73,374	19,297	-55,786	36,885	850,867
2034	54	73,192	19,249	-55,648	36,793	887,660
2035	55	73,012	19,202	-55,511	36,703	924,363
2036	56	72,832	19,155	-55,374	36,613	960,976
2037	57	72,652	19,107	-55,238	36,521	997,497
2038	58	72,473	19,060	-55,102	36,431	1,033,928
2039	59	72,294	19,014	-54,966	36,342	1,070,270
2040	60	72,116	18,967	-54,829	36,254	1,106,524
2041	61	71,938	18,920	-54,694	36,164	1,142,688
2042	62	71,759	18,872	-54,559	36,072	1,178,760
2043	63	71,583	18,827	-54,425	35,985	1,214,745
2044	64	71,405	18,779	-54,290	35,894	1,250,639
2045	65	71,229	18,733	-54,155	35,807	1,286,446
2046	66	71,054	18,687	-54,022	35,719	1,322,165
2047	67	70,878	18,641	-53,889	35,630	1,357,795
2048	68	70,703	18,595	-53,756	35,542	1,393,337
2049	69	70,529	18,549	-53,623	35,455	1,428,792
2050	70	70,355	18,504	-53,491	35,368	1,464,160
2051	71	70,181	18,457	-53,359	35,279	1,499,439
2052	72	70,008	18,412	-53,227	35,193	1,534,632
2053	73	69,835	18,366	-53,095	35,106	1,569,738

PRESENT VALUE OF NET WAGE AND BENEFIT LOSS 2004 - 2062

			EMPLOYEE	PERSONAL		
YEAR	AGE	WAGES	BENEFITS	CONSUMPTION	TOTAL	CUMULATE
***	***	*****	*****	*******	******	*****
2054	74	69,662	18,321	-52,964	35,019	1,604,757
2055	75	69,490	18,276	-52,834	34,932	1,639,689
2056	76	69,319	18,231	-52,704	34,846	1,674,535
2057	77	69,148	18,186	-52,573	34,761	1,709,296
2058	78	68,978	18,141	-52,444	34,675	1,743,971
2059	79	68,807	18,096	-52,314	34,589	1,778,560
2060	80	68,637	18,052	-52,185	34,504	1,813,064
2061	81	68,467	18,007	-52,056	34,418	1,847,482
2062	82	4,733	1,245	-3,598	2,380	\$1,849,862
MILLER		\$3,817,655	\$1,004,042	-\$2,971,835	\$1,849,862	

LOSS OF PAST HOUSEHOLD SERVICES 2001 - 2019

		HOUSEHOLD	
YEAR	AGE	SERVICES	CUMULATE
****	***	******	******
2001	21	\$3,581	\$3,581
2002	22	12,015	15,596
2003	23	12,648	28,244
2004	24	13,206	41,450
2005	25	13,608	55,058
2006	26	14,137	69,195
2007	27	14,714	83,909
2008	28	15,147	99,056
2009	29	15,306	114,362
2010	30	15,494	129,856
2011	31	15,574	145,430
2012	32	16,488	161,918
2013	33	16,488	178,406
2014	34	16,911	195,317
2015	35	17,328	212,645
2016	36	17,698	230,343
2017	37	18,231	248,574
2018	38	18,764	267,338
2019	39	19,327	\$286,665
MILLER	2	\$286,665	

PRESENT VALUE OF FUTURE HOUSEHOLD SERVICES 2020 - 2062

		HOUSEHOLD	DISCOUNT	PRESENT	
YEAR	AGE	SERVICES	FACTOR	VALUE	CUMULATE
****	***	*****	*****	*****	******
2020	40	\$19,907	0.98765	\$19,661	\$19,661
2021	41	20,106	0.97546	19,613	39,274
2022	42	20,307	0.96342	19,564	58,838
2023	43	20,510	0.95152	19,516	78,354
2024	44	20,715	0.93978	19,468	97,822
2025	45	20,922	0.92817	19,419	117,241
2026	46	21,131	0.91672	19,371	136,612
2027	47	21,342	0.90540	19,323	155,935
2028	48	21,555	0.89422	19,275	175,210
2029	49	21,771	0.88318	19,228	194,438
2030	50	21,989	0.87228	19,181	213,619
2031	51	22,209	0.86151	19,133	232,752
2032	52	22,431	0.85087	19,086	251,838
2033	53	22,655	0.84037	19,039	270,877
2034	54	22,882	0.82999	18,992	289,869
2035	55	23,111	0.81975	18,945	308,814
2036	56	23,342	0.80963	18,898	327,712
2037	57	23,575	0.79963	18,851	346,563
2038	58	23,811	0.78976	18,805	365,368
2039	59	24,049	0.78001	18,758	384,126
2040	60	24,289	0.77038	18,712	402,838
2041	61	24,532	0.76087	18,666	421,504
2042	62	24,777	0.75147	18,619	440,123
2043	63	25,025	0.74220	18,574	458,697
2044	64	25,275	0.73303	18,527	477,224
2045	65	25,528	0.72398	18,482	495,706
2046	66	25,783	0.71505	18,436	514,142
2047	67	26,041	0.70622	18,391	532,533
2048	68	38,894	0.69750	27,129	559,662
2049	69	39,283	0.68889	27,062	586,724
2050	70	39,676	0.68038	26,995	613,719
2051	71	40,073	0.67198	26,928	640,647
2052	72	40,474	0.66369	26,862	667,509
2053	73	40,879	0.65549	26,796	694,305
2054	74	41,288	0.64740	26,730	721,035
2055	75	41,701	0.63941	26,664	747,699
2056	76	42,118	0.63152	26,598	774,297
2057	77	42,539	0.62372	26,532	800,829
2058	78	42,964	0.61602	26,467	827,296
2059	79	43,394	0.60841	26,401	853,697
2060	80	43,828	0.60090	26,336	880,033
2061	81	44,266	0.59348	26,271	906,304
2062	82	3,062	0.59298	1,816	\$908,120

NICOLE MILLER

\$908,120

PRESENT VALUE OF NET HOUSEHOLD SERVICE LOSS 2001 - 2062

		HOUSEHOLD	
YEAR	AGE	SERVICES	CUMULATE
***	***	*****	*****
2001	21	\$3,581	\$3,581
2002	22	12,015	15,596
2003	23	12,648	28,244
2004	24	13,206	41,450
2005	25	13,608	55,058
2006	26	14,137	69,195
2007	27	14,714	83,909
2008	28	15,147	99,056
2009	29	15,306	114,362
2010	30	15,494	129,856
2011	31	15,574	145,430
2012	32	16,488	161,918
2013	33	16,488	178,406
2014	34	16,911	195,317
2015	35	17,328	212,645
2016	36	17,698	230,343
2017	37	18,231	248,574
2018	38	18,764	267,338
2019	39	19,327	286,665
2020	40	19,661	306,326
2021	41	19,613	325,939
2022	42	19,564	345,503
2023	43	19,516	365,019
2024	44	19,468	384,487
2025	45	19,419	403,906
2026	46	19,371	423,277
2027	47	19,323	442,600
2028	48	19,275	461,875
2029	49	19,228	481,103
2030	50	19,181	500,284
2031	51	19,133	519,417
2032	52	19,086	538,503
2033	53	19,039	557,542
2034	54	18,992	576,534
2035	55	18,945	595,479
2036	56	18,898	614,377
2037	57	18,851	633,228
2038	58	18,805	652,033
2039	59	18,758	670,791
2040	60	18,712	689,503
2041	61	18,666	708,169
2042	62	18,619	726,788
2043	63	18,574	745,362
2044	64	18,527	763,889
2045	65	18,482	782,371
2046	66	18,436	800,807
2047	67	18,391	819,198
2048	68	27,129	846,327
2049	69 70	27,062	873,389
2050	70	26,995	900,384

PRESENT VALUE OF NET HOUSEHOLD SERVICE LOSS 2001 - 2062

		HOUSEHOLD	
YEAR	AGE	SERVICES	CUMULATE
****	***	*****	******
2051	71	26,928	927,312
2052	72	26,862	954,174
2053	73	26,796	980,970
2054	74	26,730	1,007,700
2055	75	26,664	1,034,364
2056	76	26,598	1,060,962
2057	77	26,532	1,087,494
2058	78	26,467	1,113,961
2059	79	26,401	1,140,362
2060	80	26,336	1,166,698
2061	81	26,271	1,192,969
2062	82	1,816	\$1,194,785

LOSS OF PAST VALUE OF LIFE TO NICOLE 2001 - 2019

YEAR	AGE	LVL	CUMULATE
***	***	*****	*****
2001	21	\$29,936	\$29,936
2002	22	100,782	130,718
2003	23	102,677	233,395
2004	24	106,024	339,419
2005	25	109,650	449,069
2006	26	112,436	561,505
2007	27	117,023	678,528
2008	28	117,128	795,656
2009	29	120,314	915,970
2010	30	122,119	1,038,089
2011	31	125,734	1,163,823
2012	32	127,921	1,291,744
2013	33	129,840	1,421,584
2014	34	130,827	1,552,411
2015	35	131,782	1,684,193
2016	36	134,510	1,818,703
2017	37	137,348	1,956,051
2018	38	139,971	2,096,022
2019	39	142,771	\$2,238,793
MILLER	}	\$2,238,793	

PRESENT VALUE OF FUTURE VALUE OF LIFE TO NICOLE 2020 - 2062

			DISCOUNT	PRESENT	
YEAR	AGE	LVL	FACTOR	VALUE	CUMULATE
***	***	*****	*****	******	*****
2020	40	\$145,626	0.98765	\$143,828	\$143,828
2021	41	145,626	0.97546	142,052	285,880
2022	42	145,626	0.96342	140,299	426,179
2023	43	145,626	0.95152	138,566	564,745
2024	44	145,626	0.93978	136,856	701,601
2025	45	145,626	0.92817	135,166	836,767
2026	46	145,626	0.91672	133,498	970,265
2027	47	145,626	0.90540	131,850	1,102,115
2028	48	145,626	0.89422	130,222	1,232,337
2029	49	145,626	0.88318	128,614	1,360,951
2030	50	145,626	0.87228	127,027	1,487,978
2031	51	145,626	0.86151	125,458	1,613,436
2032	52	145,626	0.85087	123,909	1,737,345
2033	53	145,626	0.84037	122,380	1,859,725
2034	54	145,626	0.82999	120,868	1,980,593
2035	55	145,626	0.81975	119,377	2,099,970
2036	56	145,626	0.80963	117,903	2,217,873
2037	57	145,626	0.79963	116,447	2,334,320
2038	58	145,626	0.78976	115,010	2,449,330
2039	59	145,626	0.78001	113,590	2,562,920
2040	60	145,626	0.77038	112,187	2,675,107
2041	61	145,626	0.76087	110,802	2,785,909
2042	62	145,626	0.75147	109,434	2,895,343
2043	63	145,626	0.74220	108,084	3,003,427
2044	64	145,626	0.73303	106,748	3,110,175
2045	65	145,626	0.72398	105,430	3,215,605
2046	66	145,626	0.71505	104,130	3,319,735
2047	67	145,626	0.70622	102,844	3,422,579
2048	68	145,626	0.69750	101,574	3,524,153
2049	69	145,626	0.68889	100,320	3,624,473
2050	70	145,626	0.68038	99,081	3,723,554
2051	71	145,626	0.67198	97,858	3,821,412
2052	72	145,626	0.66369	96,651	3,918,063
2053	73	145,626	0.65549	95,456	4,013,519
2054	74	145,626	0.64740	94,278	4,107,797
2055	75	145,626	0.63941	93,115	4,200,912
2056	76	145,626	0.63152	91,966	4,292,878
2057	77	145,626	0.62372	90,830	4,383,708
2058	78	145,626	0.61602	89,709	4,473,417
2059	79	145,626	0.60841	88,600	4,562,017
2060	80	145,626	0.60090	87,507	4,649,524
2061	81	145,626	0.59348	86,426	4,735,950
2062	82	9,974	0.59298	5,914	\$4,741,864
				No. of the contract of the con	

NICOLE MILLER

\$4,741,864

PRESENT VALUE OF NET VALUE OF LIFE TO NICOLE 2001 - 2062

			~
YEAR	AGE	LVL	CUMULATE
****	***	******	******
2001	21	\$29,936	\$29,936
2002	22	100,782	130,718
2003	23	102,677	233,395
2004	24	106,024	339,419
2005	25	109,650	449,069
2006	26	112,436	561,505
2007	27	117,023	678,528
2008	28	117,128	795,656
2009	29	120,314	915,970
2010	30	122,119	1,038,089
2011	31	125,734	1,163,823
2012	32	127,921	1,291,744
2013	33	129,840	1,421,584
2014	34	130,827	1,552,411
2015	35	131,782	1,684,193
2016	36	134,510	1,818,703
2010	37		1,956,051
		137,348	
2018	38	139,971	2,096,022
2019	39	142,771	2,238,793
2020	40	143,828	2,382,621
2021	41	142,052	2,524,673
2022	42	140,299	2,664,972
2023	43	138,566	2,803,538
2024	44	136,856	2,940,394
2025	45	135,166	3,075,560
2026	46	133,498	3,209,058
2027	47	131,850	3,340,908
2028	48	130,222	3,471,130
2029	49	128,614	3,599,744
2030	50	127,027	3,726,771
2031	51	125,458	3,852,229
2032	52	123,909	3,976,138
2033	53	122,380	4,098,518
2034	54	120,868	4,219,386
2035	55	119,377	4,338,763
2036	56	117,903	4,456,666
2037	57	116,447	4,573,113
2038	58	115,010	4,688,123
2039	59	113,590	4,801,713
2040	60	112,187	4,913,900
2041	61	110,802	5,024,702
2042	62	109,434	5,134,136
2043	63	108,084	5,242,220
2044	64	106,748	5,348,968
2045	65	105,430	5,454,398
2045	66	104,130	5,558,528
2040	67	102,844	5,661,372
2047	68	102,844	5,762,946
2048	69	100,320	5,863,266
2049		99,081	5,863,266
2 050	70	33,UOI	5,304,34/

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PRESENT VALUE OF NET VALUE OF LIFE TO NICOLE 2001 - 2062

YEAR	AGE	LVL	CUMULATE
****	***	*****	*****
2051	71	97,858	6,060,205
2052	72	96,651	6,156,856
2053	73	95,456	6,252,312
2054	74	94,278	6,346,590
2055	75	93,115	6,439,705
2056	76	91,966	6,531,671
2057	77	90,830	6,622,501
2058	78	89,709	6,712,210
2059	79	88,600	6,800,810
2060	80	87,507	6,888,317
2061	81	86,426	6,974,743
2062	82	5,914	\$6,980,657